

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 18 and 20-27 are pending in the application, with 18 being the independent claims. Claim 27 is withdrawn. The amendment to claim 18 has support for example in original claim 19 and the fourth paragraph on page 21 of the specification. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Benefit and Priority Claims

In paragraph 3 of the office action the Examiner indicates that the benefit claim must be updated to indicate that one of the documents has issued as a U.S. Patent.

It is noted that the Application Data Sheet filed on April 2, 2004 claimed domestic benefit as the present application being a division of U.S. Application No. 09/665,314, filed on September 19, 2000, which is a division of U.S. Application No. 09/236,110, filed on January 25, 1999, now U.S. Patent No. 6,194,818. The filing receipt mailed on June 21, 2004 noted the domestic benefit and indicated that U.S. Application No. 09/665,314 is now U.S. Patent No. 6,748,635. Accordingly, no petition or fee is believed necessary.

It is believed Applicants have fully met all requirements for claiming both benefit and foreign priority. In addition, the specification has been amended herewith to include

the claim to domestic benefit, as recited on the filing receipt to include reference to U.S. Patent No. 6,748,635.

Objection to the Abstract

The Examiner objected to the abstract in paragraph 7 of the office action.

The abstract has been amended herewith in compliance with MPEP §608.01(b).

It is respectfully requested that the objection be withdrawn.

Objection to the Title

The Examiner objected to the title of the invention in paragraph 8 of the office action.

The title of the invention has been amended herewith as suggested by the Examiner. It is respectfully requested that the objection be withdrawn.

Rejection of claims 18-26 under 35 U.S.C. § 112

Claims 18-26 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection.

The Examiner indicated that the phrase "an island-like way" in claim 18 was indefinite. Applicants have amended claim 18 to remove the phrase "an island-like way." It is respectfully requested that the rejection be withdrawn.

Rejection of claims 18-20 under 35 U.S.C. § 102

Claims 18-20 have been rejected under 35 U.S.C. § 102(b) as being anticipated by the publication to Klee *et al.*, titled "Analytic Study of Growth of Polycrystalline Titanate Thin Films" (the "Klee publication"). Applicants respectfully traverse this rejection.

Claim 18 has been amended to state "depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals." The Examiner points to page 264 of the Klee publication for disclosure of depositing a thin metal film on a bottom metal layer, such that parts of the thin metal film remain on crystal boundaries of the bottom metal layer and form seed crystals.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); M.P.E.P. § 2131. The Klee publication does not disclose each and every element set forth in claim 18, particularly " depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals."

The Klee publication discloses depositing a thin film on the surface of a bottom electrode for a ferroelectric capacitor wherein the thin film is a piezoelectric thin film precursor formed by a sol-gel or MOD method (page 264). The precursor material is a solution containing PZT, not a titanium film (page 264). It is noted that the Klee publication discloses a 5 nm thick titanium adhesion layer, but this functions as an adhesion layer and does not form seed crystals as required in claim 18 (page 264). The Klee publication does not disclose depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals. The Klee publication does not anticipate claim 18.

Accordingly, for at least the above reasons, independent claim 18 and claims 19-20, which depend therefrom, are patentable. Applicants respectfully request that the Examiner reconsider the rejection of the claims and that this rejection be withdrawn.

Rejection of Claims 18, 19 and 21-26 under 35 U.S.C. § 103

Claims 18, 19, 21, 22 and 23 have been rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,056,994 to Paz de Araujo *et al.* (the "Paz de Araujo" patent) in view of the Klee publication. Claims 24-26 have been rejected under 35 U.S.C. § 103(a) as being obvious over the Paz de Araujo patent in view of the Klee publication and further in view of U.S. Patent No. 4,963,390 to Lipeles *et al.* (the "Lipeles patent"). Applicants respectfully traverse these rejections.

Claim 18 has been amended to state " depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals." The Examiner points to P20 in Figure 14 in the Paz de Araujo patent as disclosing depositing a thin metal film on a bottom metal layer, such that parts of the thin metal film remain on crystal boundaries of the bottom metal layer and form seed crystals. Applicants respectfully traverse this rejection.

The Paz de Araujo patent discloses coating a mist of precursor solution formed from a mixture of three metal carboxylates (FIG. 14). There is no disclosure or suggestion of the precursor solution being a titanium film. It is noted that the Paz de Araujo patent discloses depositing a thin titanium metal layer of about 200 Angstroms on top of a silicon dioxide layer in order to assist a subsequently deposited platinum layer in adhering to the silicon dioxide (col. 9, line 64 to col. 10, line 5). This titanium layer

functions as an adhering layer and does not form seed crystals as required in claim 18.

The Paz de Araujo patent does not disclose or suggest depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals.

As noted above, the Klee publication does not disclose or suggest depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals.

The Lipeles patent does not disclose or suggest depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals.

A combination of the teachings of the Paz de Araujo patent, the Klee publication, and the Lipeles patent does not disclose or suggest depositing a thin titanium film on a bottom metal layer such that parts of the thin titanium film remain separately on crystal grain boundaries of the bottom metal layer and to form seed crystals. Claim 18 is non-obvious.

Accordingly, for at least the above reasons, independent claims 18 and claims 19 and 21-26, which depend therefrom, are patentable. Applicants respectfully request that the Examiner reconsider the rejection of the claims and that this rejection be withdrawn.

Conclusion

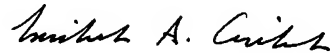
All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the

Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Michele A. Cimbala
Attorney for Applicants
Registration No. 33,851

Date: April 24, 2006

1100 New York Avenue, N.W.
Washington, D.C. 20005-3934
(202) 371-2600
514018